Astrophysics Research And Analysis

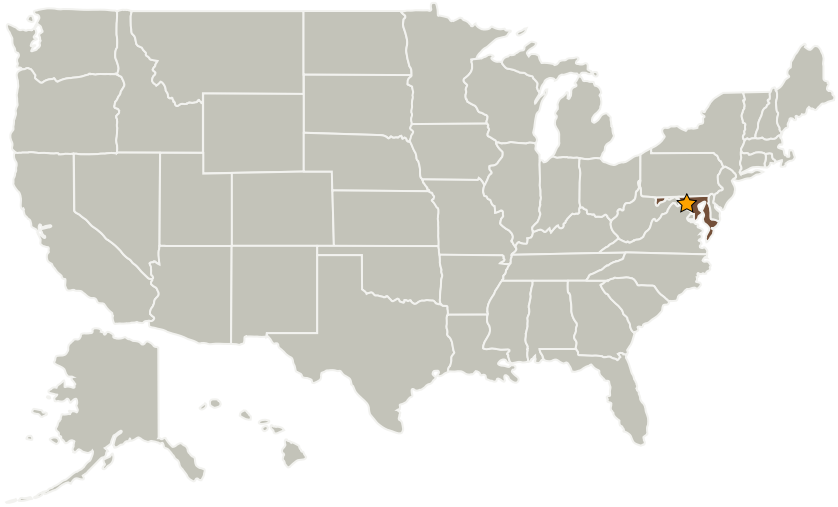
BETTII: The Balloon Experimental Twin Telescope for Infrared Interferometry (Phase 2a) - High Angular Resolution Astronomy at Far-Infrared Wavelengths

Completed Technology Project (2015 - 2019)

Project Introduction

The Balloon Experimental Twin Telescope for Infrared Interferometry (BETTII) is an eight-meter baseline far-infrared interferometer to fly on a high altitude balloon. The combination of the long baseline with a double-Fourier instrument allows BETTII to simultaneously gain both spatial and spectral information; BETTII is designed for spatially-resolved spectroscopy. The unique data obtained with BETTII will be valuable for understanding how stars form within dense clusters, by isolating individual objects that are unresolved by previous space telescopes and my measuring their spectral energy distributions. BETTII will be also used in future flights to understand the processes in the cores of Active Galactic Nuclei. In addition to these scientific goals, BETTII serves as a major step towards achieving the vision of space-based interferometry.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations
Maryland

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Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Astrophysics Research and Analysis

Project Management

Program Director:

Michael A Garcia

Program Manager:

Dominic J Benford

Principal Investigator:

Stephen A Rinehart

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Completed Technology Project (2015 - 2019)

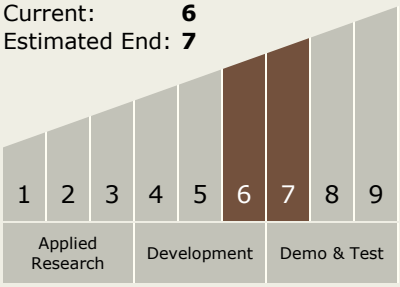
Project Management *(cont.)*

Co-Investigators:

John C Mather
Enzo Pascale
Stephen F Maher
David T Leisawitz
Roser Juanola-parramon
Robert Silverberg
Richard G Lyon
Dale J Fixsen
Elmer H Sharp
Arnab Dhabal
Alan J Kogut
Loic J Rizzo
Lee G Mundy
Peter A Ade
Hiroshi Shibai
Giorgio Savini
Johannes G Staguhn

Technology Maturity (TRL)

Start: **6**
Current: **6**
Estimated End: **7**



Technology Areas

Primary:

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BETTII: The Balloon Experimental Twin Telescope for Infrared Interferometry (Phase 2a) - High Angular Resolution Astronomy at Far-Infrared Wavelengths

Completed Technology Project (2015 - 2019)

Technology Areas *(cont.)*

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destination

Outside the Solar System